SWS:lmp 10/14/04 P0323

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
Geoffrey B. Rhoads
Application No.: 09/800,093
Filed: March 5, 2001
For: GEO-REFERENCING OF AERIAL IMAGERY USING EMBEDDED IMAGE IDENTIFIERS AND CROSS-REFERENCED DATA SETS

Art Unit: 2676
Conf. No.: 3258

CERTIFICATE OF FAXING
I hereby certify that theses papers are being facsimile transmitted to the US Patent Office, 703-872-9306 on October 14, 2004.

Steven W. Stewart, Reg. No. 45,133
Attorney for Applicant

Examiner: Anthony J. Blackman
Date: October 14, 2004

TRANSMITTAL LETTER

MAIL STOP APPEAL BRIEF – PATENTS
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

We noticed that the subject application was recently converted into an electronic file, but it appears that our Appeal Brief has yet to be matched with the file. Accordingly, we are transmitting a copy of our Appeal Brief for the Office's convenience. A copy of our stamped postcard receipt is attached evidencing the timely filing of our Brief.

No fee is believed due. Nevertheless, the Office is authorized to charge our deposit account 50-1071 any fees necessary to consider our Brief. If a petition for an extension of time is needed, please consider this as such a petition.

Respectfully submitted,

Date: October 14, 2004

DIGIMARC CORPORATION

CUSTOMER NUMBER 23735

By_____
Steven W. Stewart
Registration No. 45,133

Phone: 503-885-9699
FAX 503-885-9880

Receipt is hereby acknowledged by the U.S. Patent and Trademark Office of the following: Appeal Brief, Amendment Accompanying Appeal Brief and Transmittal Letter with deposit account authorization

Inventor: Geoffrey B. Rhoads
Filed March 5, 2001
Appn No. 09/800,093

SWS:lmp P0323
September 20, 2004

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SWS:lmp 9/20/04 P0323

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Response Under 37 CFR § 1.116
Expedited Procedure

In re application of:

Geoffrey B. Rhoads

Application No.: **09/800,093**

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Examiner: Anthony J. Blackman

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CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service on September 20, 2004, as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief – Patents, COMMISSIONER FOR PATENTS P.O. Box 1450, Alexandria, VA 22313-1450

Steven W. Stewart
Attorney for Applicants

TRANSMITTAL LETTER

MAIL STOP APPEAL BRIEF – PATENTS
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

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Enclosed for filing in the above-captioned matter are the following:

☒ Appeal Brief (fee $330.00)

☒ Amendment Accompanying Appeal Brief

☒ If an extension of time is required, please consider this a petition therefor.

☒ Please charge $330.00 (fee for Appeal Brief) and any additional fees which may be required in connection with filing this document and any extension of time fee, or credit any overpayment, to Deposit Account No. 50-1071.

Date: September 20, 2004

Respectfully submitted,

DIGIMARC CORPORATION

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By _____
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Steven W. Stewart
Attorney for Applicants

AMENDMENT ACCOMPANYING APPEAL BRIEF

Mail Stop Appeal Brief – Patents
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

COPY

Sir:

Introductory Remarks

Please enter the following amendments prior to consideration of the accompanying Appeal Brief. Entry is believed proper since this Amendment simplifies issues on appeal.

Amendments to the Claims:

1. (original): In a method of compiling satellite imagery and generating a map therefrom, an improvement comprising:

watermarking image data acquired by a satellite;

storing the watermarked image data in a database;

generating a map from the database; and

watermarking the map.

2-7. (canceled)

8. (previously presented): A composite map formed from plural sets of component map data, characterized in that said plural sets of component map data each are encoded with a different watermark, each of said different watermarks encoding, or linking to, meta data associated with its respective component map data.

9-15. (canceled)

REMARKS

Claim Status

Claims 1 and 8 are pending in the present application. Claims 2-6 are canceled without prejudice and merely to simplify issues for appeal. Canceling these claims should not be construed as an admission of the propriety of the outstanding rejections. Indeed, applicant expressly traverses the outstanding rejections of these now-cancelled claims. Applicant reserves the right to prosecute the subject matter in the canceled claims in one or more continuing applications.

Entry is Proper

Entry of this Amendment is considered proper since it removes issues from appeal. (See MPEP 1207). Specifically, claims 2-6 have been canceled. These amendments should only require a cursory review by the Office. Entry of this Amendment Accompanying Appeal Brief is, therefore, considered proper.

Conclusion

The Examiner is invited to telephone the undersigned at 503-495-4575 if any issue remains.

Date: September 20, 2004

Respectfully submitted,

DIGIMARC CORPORATION

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Examiner: A. Blackman

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Steven W. Stewart
Attorney for Applicants

APPEAL BRIEF

Mail Stop Appeal Brief – Patents
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants respectfully request the Board of Patent Appeals and Interferences (hereafter "Board") to reverse the outstanding final rejections.

This Appeal Brief is in furtherance of a Notice of Appeal filed August 6, 2004. Please charge the fee required under 37 CFR 1.17(f) or any deficiency to deposit account 50-1071 (please see the accompanying transmittal letter).

TABLE OF CONTENTS

REAL PARTY IN INTEREST

The real party in interest is Digimarc Corporation, by an assignment from the inventors recorded at Reel 011901, Frames 0376-0377, on June 18, 2001.

RELATED APPEALS AND INTERFERENCES

An Appeal Brief is filed concurrently herewith in child U.S. Patent Application No. 10/002,954.

STATUS OF CLAIMS

Claims 1 and 8 stand finally rejected and are being appealed.

Claims 2-7 and 9-15 have been canceled.

STATUS OF AMENDMENTS

An Amendment Accompanying Appeal Brief is filed concurrently herewith. The claims discussed herein correspond to those remaining after entry of the accompanying amendment.

All other amendments have been entered.

SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter generally relates to embedding digital watermarks in aerial imagery and generating maps therefrom.

A first aspect of the invention, as recited in claim 1, provides a method of compiling satellite imagery and generating a map therefrom (see, e.g., page 3, lines 11-16; page 12, lines 22-23; see also original claim 1). An improvement includes watermarking image data acquired by a satellite (see, e.g., page 9, lines 22-23; page 10, lines 19-20; and see also original claim 1); storing the watermarked image data in a database (see, e.g., page 12, lines 15-21; and see also original claim 1); generating a map from the database (see, e.g., page 8, lines 4-26; page 12, lines 15-21; page 12, lines 22-23; see also original claim 1); and then watermarking the map (see, e.g., page 10, lines 19-21; page 12, lines 15-16; page 12, lines 22-23; and see also, original claim 1).

Another aspect of the invention, as recited in claim 8, is a composite map formed from plural sets of component map data (see, e.g., page 12, lines 15-21; page 12, lines 22-23). The method is characterized in that the plural sets of component map data each are encoded with a different watermark (see, e.g., page 10, lines 19-25; page 10, line 26 – page 11, line 2; page 11, lines 3-6; page 12, line 29 – page 13, line 8; and see also original claim 8), each of said different watermarks encoding, or linking to, meta data associated with its respective component map data (see, e.g., page 11, lines 19-23; page 11, line 24 – page 12, line 11; see also original claim 8).

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claim 1 stands finally rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,504,571 (hereafter "the Narayanaswami patent").

2. Claim 8 stands finally rejected under 35 U.S.C. 103(a) as being unpatentable over the Narayanaswami patent in view of U.S. Patent No. 6,526,155 (hereafter "the Wang patent").

ARGUMENT

Introduction

The cited references fail to teach or suggest all of the elements of the pending claims for at least the reasons set forth below.

Rejection under U.S.C. 102(e) over the Narayanaswami patent

Claim 1

Independent claim 1 reads as follows:

1. *In a method of compiling satellite imagery and generating a map therefrom, an improvement comprising:*

watermarking image data acquired by a satellite;

storing the watermarked image data in a database;

generating a map from the database; and

watermarking the map.

Claim 1 recites two distinct watermarking steps. First, image data that is acquired by a satellite is watermarked. Second, a map generated from the already watermarked image data is watermarked.

The Narayanaswami patent does not teach or suggest such first and second watermarking steps in the manner recited by claim 1.

The office correctly suggests[1] that the Narayanaswami patent Col. 8, lines 6-19, discloses placing parameters into a "captured image" (see Col. 8, lines 6-16, discussing camera 100). The cited Col. 8 passage corresponds to the Narayanaswami patent at FIG. 1, which "is a block diagram of an image capturing system for generating digital images having a plurality of recorded parameters . . . . " (emphasis added) (see Col. 4, lines 49-52). Camera 100 includes a watermark processor 134 by which a captured image is watermarked (see FIG. 1; see also Col. 8, lines 6-8).

What is lacking is a second watermarking step for a map generated from already watermarked images.

To meet this feature the Office vaguely states: "it is inherent that as long as watermarking image data acquired by a satellite is performed that watermarking the map must also be performed" (see the final office action, page 4, last 3 lines).

While the Office's statement may support watermarking of images, it fails to provide a second step of watermarking already-watermarked imagery generated from a database in the form of a map. The Narayanaswami patent discusses generating a map (see Col. 4, lines 32-41)

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1 See the May 7, 2004, Final Office Action on page 2, lines 12-14 of paragraph 1.

and displaying retrieved digital images (see Col. 4, line 42). Yet, the Narayanaswami patent is silent about watermarking such a generated or displayed map.

There are benefits to the claim 1 combination.

For example, second stage watermarking can be used for forensic or identification purposes. Consider the description on page 12, lines 15-21 of the specification:

> *In some embodiments, a watermark can be applied to each DEM/map from the master database as it is retrieved and output to the user. The watermark can indicate (i.e., by direct encoding, or by pointing to a database record) certain data related to the compiled data set, such as the date/time of creation, the ID of the person who queried the database, the component datasets used in preparing the output data, the database used in compiling the output data, etc. Thereafter, if this output data is printed, or stored for later use, the watermark persists, permitting this information to be later ascertained.*

By way of further example, in some implementations, second stage watermarking may include so-call "fragile" watermarking. Fragile watermarking is designed to disappear or predictably degrade to evidence manipulation. Consider the description on page 12, line 29 – page 13, line 4 of the specification:

> *Some watermarks used in the foregoing embodiments can be "fragile." That is, they can be designed to be lost, or to degrade predictably, when the data set into which it is embedded is processed in some manner. Thus, for example, a fragile watermark may be designed so that if an image is JPEG compressed and then decompressed, the watermark is lost. Or if the image is printed, and subsequently scanned back into digital form, the watermark is corrupted in a foreseeable way.*

(These examples are not meant to limit the scope of claim 1. Of course, there are many other examples and implementations that will fall within the scope of claim 1.)

While the Narayanaswami patent might suggest watermarking captured satellite imagery, it does not teach or suggest a second watermarking step to watermark a map generated from the already watermarked satellite imagery.

Respectfully, the final rejection of claim 1 should be reversed.

Rejection under U.S.C. 103(a) over the Narayanaswami patent in view of the Wang patent

Claim 8

Independent claim 8 reads as follows:

8. *A composite map formed from plural sets of component map data, characterized in that said plural sets of component map data each are encoded with a different watermark, each of said different watermarks encoding, or linking to, meta data associated with its respective component map data.*

The Office correctly recognizes that the Narayanaswami patent does not teach or suggest a composite map formed from plural set of component map data, with each component including a different watermark, and with each of the different watermarks encoding or linking to metadata associated with its respective component map data (see the final office action at page 7, lines 1-14). The Office turns to the Wang patent to meet the Narayanaswami patent's deficiencies.

The Wang patent is cited, at Col. 4, line 4 – Col. 5, line 9, as curing the Narayanaswami patent's deficiencies. Applicant respectfully disagrees.

The cited passage is not understood to teach or suggest that each component includes a different encoded watermark in each component. Instead, the Wang patent's FIG. 1 appears to place the same visible "X" in an image.

And, there is no mention in the cited passages of the Wang patent that each of the different watermarks encodes or link to metadata associated with its respective component map data. For example, there is no suggestion that a first "X" in Fig. 1 encodes or links to information that is different than a second "X" in Fig. 1. Indeed, there is no suggestion that the Xs encode or link to metadata associated with their particular component.

The Wang patent also draws a distinction between "visible" and "invisible" watermarks (see, e.g., Col. 1, lines 12-44). One distinction is that invisible watermarks require hardware or software techniques to retrieve encoded information (see Col. 1, lines 39-44). This distinction implies that visible watermarks rely on the human unaided eye. The Office relies on passages of the Wang patent (e.g., in Cols. 4 and 5) that discuss visible watermarks. It is a far – and unfair – stretch to suggest that the visible watermarks (e.g., the "X" in Fig. 1) "encode" or "link" to metadata in the manner envisioned in claim 8.

We also object to combining the references as suggested. We submit that an artisan would not be motivated to combine the visible watermarking (e.g., the "X") found in the Wang patent with the digital information embedding (e.g., longitude and latitude from the Table in Col. 7) found in the Narayanaswami patent to achieve the combination recited in claim 8.

Thus, the proposed combination is improper.

We respectfully request that the final rejection of claim 8 be reversed.

CONCLUSION AND REQUEST FOR REVERSAL

The cited references fail to disclose all of the limitations of the pending claims. (Other deficiencies of the art need not be further belabored at this time.) As such, the claims are patentable over the cited references.

Applicants respectfully request that the Board reverse the final rejection of the pending claims.

Respectfully submitted,

DIGIMARC CORPORATION

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CLAIMS APPENDIX

1. (original): In a method of compiling satellite imagery and generating a map therefrom, an improvement comprising:

watermarking image data acquired by a satellite;

storing the watermarked image data in a database;

generating a map from the database; and

watermarking the map.

8. (previously presented): A composite map formed from plural sets of component map data, characterized in that said plural sets of component map data each are encoded with a different watermark, each of said different watermarks encoding, or linking to, meta data associated with its respective component map data.